**Measuring Electric Power**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_**

***General Outcome #3: Examine the power and efficiency of various devices.***

* ***Can I calculate the amount of energy that a device uses?***

**Ensure you show your work and include a meaningful sentence.**

1. What is the power (in watts and kilowatts) of a hair dryer that requires 10 A of current to operate on a 120 V circuit?
2. The maximum current that a 68.5 cm television can withstand is 2 A. If the television is connected to a 120 V circuit, how much power is the television using?
3. A 900 W microwave oven requires 7.5 A of current to run. What is the voltage of the circuit to which the microwave is connected?
4. A flashlight using two 1.5 V D-cells contains a bulb that can withstand up to 0.5 A of current. What would be the maximum power of the bulb?
5. a) If a refrigerator requires 700 W of power to function, how many kilowatt

hours of power will it require in a 30-day period?

* 1. If electricity costs 11 cents per kilowatt hour, how much would the refrigerator cost to operate in that period?

1. A home-owner finds that she has a total of 42 light bulbs (100 W) in use in her home.
2. If all of the bulbs are on for an average of 5 hours per day, how many kilowatt hours of electricity will be consumed in a 30-day period?
3. At 11 cents per kilowatt hour, how much will operating the light cost the home-owner during that period?
4. How much money would the home-owner save if she switched all of the bulbs to energy-saving 52 W light bulbs?
5. Bob has a stereo that operates at 120 V, using 2.5 A of current.
6. How much power does Bob’s stereo need to operate? (Hint: Think back to the previous power-calculation problems)
7. If Bob plays his stereo for an average of 5 hours each day, how much electricity will he use in a 30-day period?